



VITREX (PTY) LTD

Tel: +27 11 826-6057/8/9 Fax: +27 11 823-1641

PO Box 13101, Witfield 1467, South Africa

9 Jansen Road, Jet Park, Boksburg

email: vitrex@vitrex.co.za

www.vitrex.co.za



VITREX TECHNICAL NOTES

Vitreous Enamel (VE) Steel Surface - vs - HPDL Formica (Non-magnetic) and Painted Steel (Magnetic) Surfaces

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(E&OE - Document and content subject to change without prior notice)

The alternative painted steel surfaces, often categorized alongside vitreous enamel steel by a number of other manufacturers under the generic banner of “magnetic surfaces”, and the high pressure density laminate writing surfaces, also referred to as a “non-magnetic” - although cheaper in the short term - cannot match VE steel, in terms of material construction, properties and ultimate performance.

- a. A vitreous enamelled steel surface is created when an application of an inorganic coating consisting of glass, oxides and various minerals is fused to an enamelling quality steel base at temperatures of around 740^o C for chalk boards and 820^o C for white boards.
- b. Chalk board surfaces are matt and finely structured, olive green in colour, giving maximum chalk contrast and readability, whilst at the same time remaining easy to erase. Optimum viewing is ensured from all angles due to the almost total absence of reflection. All Vitrex chalk board surfaces meet and exceed the requirements of SABS Standard CKS 36:2004 Edition 4.
- c. White board surfaces are semi-gloss therefore suitable for use with dry wipe marker pens and are thus dust free. This is of particular importance in environments such as laboratories, hospitals, computer rooms and food processing areas, where the presence of dust may pose a health hazard or cause technical problems with sensitive equipment.



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Directors

CFG Cottino M.Sc.Eng. (Civil) (Wits), KD Holzapfel, R Narotzky ACIS (Managing), RF Vollmer, B Yawitch B. Arch. (Wits) (Chairman)
Reg. No. 83/13778/07

- d. A vitreous enamel surface exhibits specific properties that make it the ideal writing surface, particularly in high use applications:
- i. **Ease of Cleaning** - The chalk board and white board surfaces can be effectively cleaned with a damp cloth and a very mild alkaline soap.
 - ii. **Loss of Surface Texture** - Chalk board surfaces do not lose their “rough” texture over time and with frequent use, thus extending the life of the board considerably.
 - iii. **Ghosting** - White board surfaces do not exhibit what is known as “ghosting”, i.e. instances where the pen marks cannot be completely removed as the ink is partially absorbed into the surface itself (due to the porous nature of the surface), again extending the life of the board considerably.
 - iv. **Extreme surface hardness** - The surface hardness is very similar to that of glass. On the MOH scale vitreous enamel has a rating of approximately 6.9. On the same scale marble has a rating of 3, quartz of 8 and diamonds of 10. This property allows the surface to resist mechanical abrasion and prevent scratching, either accidental or intentional.
 - v. **Resistance to chemicals** - Influences such as those produced by most of the available solvents, acids and alkalis do not affect the surface or the finish. A vitreous enamel surface is the only surface that can be cleaned with thinners without any damage to the surface or finish. In instances where a permanent marker has been used in error, graffiti has been applied or paint from refurbishing the classroom may have accidentally fallen on the board, these can easily be cleaned off with the use of an appropriate detergent and water.
 - vi. **Colour fastness** - The colours are unique in appearance, fade proof and resistant to ultra violet light. The possibility also exists of permanently incorporating lines and designs into the surface.
 - vii. **Hygienic:** Due to the absence of pores the smooth, hard enamel surface eliminates the absorption of dirt and grease, reduces the presence and growth of bacteria and mould, therefore creating a more hygienic and healthy environment. Independent comparative studies, conducted by the Division of Clinical Research of the Istituti Ospedalieri in Modena (Italy), have shown that in this respect enamel outperforms other materials and coatings, including stainless steel.
- e. The alternative Painted Steel and Formica (High Pressure Density Laminate) surfaces are therefore clearly not equal surfaces to Vitreous Enamelled Steel, in terms of material construction or in terms of properties and performance.
- f. Although the Painted Steel or Formica options may provide for a more economical alternative in the short term, the use of Painted Steel or Formica as writing surfaces is not recommended, particularly in high use areas (such as teaching institutions), as the surface is susceptible to both Loss of Texture and Ghosting, leading to the necessity to replace the boards in a relatively short period of time.

- g. In addition, the use of Painted Steel or Formica as writing surfaces is also not recommended in hygienically sensitive environments such as laboratories and hospitals, as these surfaces allow for the absorption of dirt and grease, thus creating ideal conditions for the presence and growth of bacteria and mould.
- h. Vitrex has been manufacturing writing surfaces for over 50 years and we are happy and proud to guarantee our vitreous enamelled steel writing surfaces and workmanship, in respect of normal usage, against fading of colour, deterioration or failure of component vitreous enamelled parts over a period of 20 years.